FOR THE YEAR 1881.

SIXTY-FIRST ANNUAL REPORT

OF THE

BOARD OF MANAGERS

OF THE

LEHIGH COAL & NAVIGATION CO.

TO THE

STOCKHOLDERS.

FEBRUARY 28, 1882.

PHILADELPHIA:
WM. MANN, PRINTER, 529 MARKET STREET.
1882.

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At an election held February 28th, 1882, the following named persons were chosen officers of The Lehigh Coal and Navigation Company for the ensuing year:

President,

JOSEPH S. HARRIS.

Vice-President,

FRANCIS C. YARNALL.

Managers,

Francis R. Cope,	George Whitney,
Edward W. Clark,	John Leisenring,
Fisher Hazard,	James M. Willcox,
Charles Parrish,	Edward Lewis,
Charles Wheeler,	T. Charlton Henry,

Samuel Dickson.

OFFICER ELECTED BY THE BOARD OF MANAGERS:

Secretary and Treasurer,

SOLOMON SHEPHERD.

RESOLUTIONS

RELATIVE TO THE RETIREMENT OF MR. E. W. CLARK ADOPTED BY THE STOCKHOLDERS.

The following preamble and resolutions, offered by Mr. F. C. Yarnall, and seconded by Mr. S. Dickson, were, on motion, unanimously adopted:

WHEREAS, In view of the retirement of Mr. E. W. Clark from the Presidency of this Company, after an active service of fourteen years, the stockholders desire to record in permanent form their sense of the value of his labors; it is therefore unanimously Resolved by this meeting,

First. That in assuming the control of the affairs of this Company at a critical period of its history, when its credit was depressed, and its condition seriously embarrassed, Mr. Clark undertook a task of great importance and responsibility.

Second. That in his successful reorganization of its departments; in the financial plans which have resulted in the re-establishment of its credit; in the systematic development of its resources; in the persistent energy by which its property has been made increasingly productive, and its dividends resumed; and in the faithfulness by which its interests have been guarded, his character and abilities have been conspicuously manifested.

Third. The stockholders hereby tender to Mr. Clark their sincere thanks for these eminent services, with the assurance of their full appreciation of the benefits that have resulted from his administration.

Fourth. That these proceedings be entered in full upon the minutes of this meeting, and the Secretary be directed to send Mr. Clark an engrossed copy of the same.

REPORT.

The Board of Managers respectfully submit their Report for the year 1881, as follows, viz.:

Revenue from Railroads and Nesquehoning Tunnel,	$1,429,468 33
Revenue from Lehigh Canal,	55,830 14
Revenue from Water Powers Lehigh Canal,	18,947 40
Revenue from Delaware Division Canal,	74,044 81
Net Profit on Lehigh Coal,	240,742 76
Royalty on Coal mined by Lessees,	7,573 64
Revenue from Rents,	35,668 68
Miscellaneous Receipts,	13,316 32
Total,	$1,875,592 08

DISBURSEMENTS.

General and Legal Expenses,	$59,101 24	
Rent and Taxes Nesquehoning Valley R. R.,	97,050 00	
Rent and Taxes Delaware Division Canal,	120,330 04	
Taxes,	70,147 82	
Interest Account,	915,039 51	$1,261,668 61
Earnings,		$613,923 47
Less Sinking Fund of 10 cents per ton on 648,148 tons coal,	$64,814 80	
Less Depreciation on Coal Improvements,	65,332 85	130,147 65
Surplus for year,		$483,775 82
Balance to Credit of Dividend Fund December 31, 1880,		194,236 38
		$678,012 20
Dividend of $1 per share on 206,567 shares, paid Dec. 3, 1881,		206,567 00
Balance to Credit of Dividend Fund, December 31, 1881,		$471,445 20

The Coal Tonnage on the Lehigh and Susquehanna Railroad and Lehigh Canal compared with that for 1880, was as follows, viz.:

	1880. TONS.	1881. TONS.
From the Wyoming Region,	1,841,163	2,427,728
From the Upper Lehigh Region, Nescopec Branch,	448,323	531,742
From the Hazleton Region, *via* L. V. R. R.,	55,351	60,670
From the Black Creek Region, Drifton Branch,	401,943	365,188
From the Beaver Meadow Region, *via* Nesq. V. R. R.,	501,076	556,082
From the Beaver Meadow Region, *via* L. V. R. R.,	1,894	4,778
From the Mahanoy Region, *via* L. V. R. R.,	8,330	15,389
From the Mauch Chunk Region,	647,313	742,642
From the Schuylkill Region,		473
TOTAL,	3,905,393	4,704,692

Distributed as follows:

Delivered East of Mauch Chunk by Rail,	3,255,194	3,961,754
Delivered East of Mauch Chunk by Canal,	431,913	396,109
Consumed along the line above Mauch Chunk,	98,654	120,799
Delivered to connecting lines above Mauch Chunk,	119,537	225,803
Delivered to Lehigh Valley R. R. at Packerton,	95	227
	3,905,393	4,704,692
Increase,		799,299

The Gross Receipts of the Company's railroads during 1881, as compared with 1880, were as follows:

	1880.	1881.	Increase.
Passengers and Mails,	$144,375 65	$164,286 87	$19,911 22
Freight and Express,	465,397 76	540,776 58	75,378 82
Coal,	2,804,272 00	3,517,453 87	713,181 87
TOTAL,	$3,414,045 41	$4,222,517 32	$808,471 91
L. C. & Nav. Co.'s proportion,	$1,138,015 13	$1,407,505 77	$269,490 64

The gross receipts of the Lehigh and Susquehanna Railroad and branches were $808,471.91 more than in 1880, the gain being mainly in freights on coal, of which 784,077 more tons were moved than in that year. There was also a gratifying increase in earnings from passengers and miscellaneous freight.

Canal navigation opened April 29th, and closed December 15th. The late opening resulted from an ice freshet on February 12th, when part of Dam No. 4 was carried away, and the cost of maintaining the Lehigh Canal was thereby increased $37,865.31 over the previous year. The net revenue of both canals, after paying rent and taxes of Delaware Division Canal and tax on gross receipts, was $26,189.29, or $64,402.81 less than last year. The tonnage of the canals was 627,423 tons, showing a decrease, as compared with 1880, of 14,843 tons.

The production of coal was 648,148 tons, an increase of 94,978 tons over 1880. We had reason at the beginning of the year to expect a much larger increase, but the cold winter and wet spring checked production, and we had a drought of unexampled severity from early summer until late in the fall. There has been a decrease from year to year in the flow of streams in the coal regions, and we have gradually added to our water supply until we have now the full flow of all accessible streams, and have constructed numerous small reservoirs. As our operations were seriously impeded last year, and sometimes entirely stopped for want of water, we propose to construct a large storage reservoir in the Nesquehoning Valley, which will hold all the water needed for three months' consumption, and, in addition, to bore several artesian wells. Our production was further curtailed by the loss of our largest Colliery, No. 9, in the underground workings of which a fire broke out on 30th of July, caused by the carelessness of one of our men, who disobeyed the Company's orders and the advice of his associates. The fire is probably extinguished, but we cannot determine this with certainty until late in March.

Our total revenue from all sources was $1,875,592.08, a gain of $265,915.56 over 1880. The decrease in fixed charges, $25,995.95, added to this makes a total gain of $291.911.51 in net revenue over the preceding year.

A dividend of one dollar per share was paid to the stockholders in December last, and the balance remaining to the credit of Dividend Fund at the close of the year was $471,445.20. From this balance must be deducted whatever sum shall be paid to the State under the four-mill tax law for the years 1879, 1880, and 1881. The amount for which we are held to be liable is $81,248.14, but we expect to be relieved from the payment of a considerable part of this sum.

It will be noticed that the income from our railroads exceeded, for the first time, the amount of our fixed charges. The former has increased largely since 1878, and the latter have steadily decreased during the same period. We may reasonably anticipate a further increase of railroad earnings, and a material reduction in fixed charges during the next few years. In September, 1884, the right to convert Nesquehoning Valley Railroad stock into our own, or to pay it off, accrues to this Company, which we may then exercise or continue the lease at a lower rate of dividend as may be considered most to our interest.

The first mortgage 6 per cent. loan of $5,381,840.84, matures in April, 1884, and may be paid off in whole or in part by the sale of securities controlled by the Company, and the balance (if any) probably extended at a lower rate of interest.

In resuming the payment of dividends, the Board deemed it wise to retain a strong reserve of net earnings, under the conviction that this policy, together with a gradually increasing stock basis, and steady reduction of the debt of the Company, would establish the stock upon a secure foundation of productive value.

In order to clear our books of all accounts not likely to prove of any future value, we have charged to our old Profit and Loss Account several items of loss which had accumulated previous to 1880, and were not, therefore, properly chargeable to the surplus earnings of the last two years. The balance to the credit of this account is $2,287,988.92.

The floating debt, less cash assets, is about $700,000; against which the Company holds $740,000 of its consolidated 7 per cent. bonds, $306,000 Delaware Division Canal Company bonds, and 18,901 shares of its own stock.

The third instalment of the extended debenture loan was paid at maturity, December 10th, leaving only $106,190.76, due

December 10th, next, of the $762,779.18 loan that matured in 1877.

The undersigned having occupied the office of President of this Company for more than fourteen years, notified the Board, in December last, of his intention to decline a re-election at the next annual meeting of the stockholders. The Board, after due consideration, have determined to suggest the name of Mr. Joseph S. Harris for this office. Mr. Harris for several years directed our mining operations, as Superintendent and Engineer, and at present is our Consulting Engineer. His abilities, character, and experience in the department which is of so much importance to your interests, induce the Board to recommend him as one eminently fitted to be your President.

Mr. F. C. Yarnall has served the Company, from time to time, for several years, as President *pro tempore*, and he rendered especially valuable services during the sickness and absence of the President last spring and summer. He was unanimously elected Vice-President of the Company, by the Board, in October last, and they cordially present his name for election to that office for the ensuing year.

In closing his official relations with the Company, the undersigned desires to express his cordial thanks for the courtesy and unvarying support which he has received from the Board and from the subordinate officers.

Attention is invited to the accompanying reports of Joseph Weyhenmeyer, General Supervisor of Canals, and W. D. Zehner, Superintendent of Mines.

By order of the Board of Managers.

E. W. CLARK,
President.

PHILADELPHIA, February 14, 1882.

SUMMIT MINES.

REPORT OF SUPERINTENDENT AND ENGINEER.

Office of the Lehigh Coal and Navigation Company,
Lansford, Pa., January 1st, 1882.

Mr. E. W. Clark,
President.

Dear Sir: I herewith respectfully submit my report of the mining operations of this Company during the year 1881:

	TONS.	CWT.
The product of the mines worked by the Company amounted to	648,147	15
Coal mined by parties under lease, ...	14,098	15
Making a total product for the year, ...	662,246	10

The production of the collieries is shown in the following table:

Collieries.	Working Time.	COAL.			
		Total Production.		Per Day.	
	Days.	Tons.	Cwt.	Tons.	Cwt.
No. 3	256	110,483	06	431	11
4	118.45	50,784	03	430	05
5	224.7	71,336	02	316	04
6	234.5	89,679	09	318	03
8	246.7	124,673	01	505	07
9	121.9	56,693	13	464	05
10	190.55	75,710	04	395	10
11	206.65	68,787	17	332	06
		648,147	15	3,256	10

The production divided into the various sizes, with the percentage of each, is presented in the following table:

Sizes.	Tonnage.	Per Cent.
	Tons. Cwt.	
Lump, ...	97,033 04	15.0
Steamboat, . .	4,595 19	.7
Broken, . . .	123,650 00	19.1
Egg, ...	95,577 05	14.7
	320,856 08	49.5
Brought forw'd,	320,856 08	49.5
Stove, . . .	90,047 03	13.9
Chestnut, . .	135,073 07	20.8
Pea, ...	102,170 17	15.8
	648,147 15	100.

The output from the Company's mines was 94,978 tons in excess of that for the previous year. This increase is especially gratifying in view of the peculiar embarrassments to which our mining operations were subjected. The winter of 1880 was of great severity, continuing till a late period, causing much trouble from coal freezing in the cars; and was followed by a very wet spring, which much retarded the preparation. This again was succeeded by an unexampled drought in the summer and fall, during which our supply of water for washing the coal proved entirely inadequate. To these must be added the fire, by which we were deprived for half of the year of the use of our largest Colliery, No. 9.

This fire, which started on the 29th of July, was caused by one of the hoisting engineers entering one of the mine-passages with an unprotected light, in direct disobedience of general orders, to which his attention had been specially called by the Master Machinist, under whose orders he was acting, and in disregard of a warning given him by a comrade only a few moments before.

In this passage-way a steam-pipe had been placed, and the timbers which had become very dry from the heat of this pipe, were ignited by a spark from the engineer's light. The strong current of air which passed through this opening for the purpose of cooling and ventilating it, caused the fire to extend very rapidly, so that before it could be brought under control, it had extended to the upper part of the mine, where it could not be reached by water. It, therefore, became necessary to close all the mine-openings, and force in steam to extinguish it.

In the early part of October, there being no longer any signs of fire to be found, the use of steam was discontinued, and the mine reopened. It was found that a good deal of injury had been done to the workings from the closing of gangways and air-passages; but it was thought that the damage could all have been repaired, and the mines again in working order, by the middle of 1882.

The work of repair was pushed forward vigorously, and much progress had been made, when, on exploring some of the smaller passages, the heat and sulphur caused an apprehension that some fire might be still remaining. The colliery was therefore again closed, and the introduction of steam renewed. The present indication is that the mine may be reopened with entire safety by the 1st of March, but the delay thus caused will defer the production from it till late in the season.

The causes above enumerated, to which must be added the advance in wages and cost of material, have prevented us from reaping the full advantage of our increased production in reducing the cost of our coal, which has averaged for the year $1.87.

The work of improving the preparation of coal has been continued during the past year in the same direction as that followed successfully for several years. In the new breaker at Colliery No. 10, we have for the first time succeeded in making a thorough preparation of all sizes of coal by the introduction of a sufficient number of jigs to finally prepare the Egg, Stove, and Chestnut coal; thus relieving to a great extent the Screen Building, which has for some years been a weak point in our system. A noticeable economy must result from our thus being able to avoid the second preparation of this coal; and this economy has been achieved without undue expense, as the whole cost of the breaker improvements at this colliery will not reach $40,000. We can, therefore, well afford to build what new breakers we require on this plan, and thus largely diminish the amount of coal requiring a second cleaning.

In remodelling the breaker at No. 4, the preparation could not be carried to the same perfection, because of a deficient supply of water for jigging coal at that end of Panther Creek Valley.

This want of water will be the most serious drawback in the future economical preparation of our coal. The streams throughout the mining region are decreasing in volume, and there is no way to secure the necessary supply of water without resorting to large reservoirs. Nesquehoning Creek, which until within two or three years could always be relied on to furnish sufficient water for the Screen Building, has of late fallen very far short. Surveys have been made to see how this deficiency could be remedied, and a site has been found, where, at a moderate expense, a reservoir can be constructed of 220,000,000 gallons capacity. This work should be finished in time to get the benefit of it next summer, and it is hoped that our product will no longer be limited by a deficient water supply.

With a view of making still further provision against this contingency, it has been decided to commence the sinking of artesian wells in Nesquehoning Valley. A number of these have been sunk throughout the mining region in much less favorable situations, with almost uniformly good results.

The average production of the mines of this Company for the past three years has been 634,511 tons, exclusive of buckwheat coal. The causes limiting our output, which have been frequently alluded to in these reports, and which have rendered us unable to meet the demand for our coal, have led me to look closely into the best mode of increasing our production. In view of the depth which our mines have now reached, I believe the time has come when the system of perpendicular shafts should be substituted for the slopes heretofore in use.

The first cost of these is greater, but they will be found more economical eventually, because of the reduced expenditure for repairs, and the much larger development of coal.

I recommend the immediate authorization of a shaft to be sunk in the neighborhood of No. 6 Colliery. By sinking to a depth of about 300 yards, we shall, in three years, be able to open a larger colliery than any we now have, which would be economically worked, and would last, without further sinking, for many years. The coal which this shaft will develop will be needed by the time it can be reached to keep up our shipments. Another shaft should be started near Breaker No. 9. This shaft, which will probably not be quite as deep as that at No. 6, can be sunk in about the same time, and will produce as much coal as can be prepared at Breakers Nos. 8 and 9. It will cost but very little more than it would to sink the slopes another lift, will develop a much larger body of coal, which can be more economically mined, and will be needed by the time it can be finished. These shafts are all that need be undertaken in the immediate future. They should not cost more, when ready to produce coal largely, than $250,000 each.

No. 3 Colliery.—There was a falling off in the production of this Colliery during the past season, partly owing to the fact that some of the gangways have run into fault, and have ceased to produce coal, and partly to the drought, which restricted our means of preparing coal. Further investigations have shown that both the Primrose and the Mammoth Veins can be best reached by extending a tunnel south of the shaft; we expect to develop a large body of coal from both of these veins during the coming year. A short tunnel north, in the Red Ash gangway, is also expected to open a large amount of coal. The breaker at this Colliery will probably answer for this year, but will require considerable expenditure hereafter.

No. 4 Colliery.—The repairs required at this mine were more extensive than were at first anticipated. Shipments were not begun till July, and everything has since worked satisfactorily. The ventilation has been much improved by the erection of a new fan, the capacity of the breaker has been increased, eight new jigs have been introduced, and this Colliery is in condition to yield largely during the coming season.

No. 5 Colliery will continue to yield for another year at about the same rate it did during the past season. The east gangway of the lower level has been extended to the north side of the anticlinal, ending in the same fault encountered in the water-level gangway above. While there is still considerable coal along this gangway, we will not be able to work it until after the counter gangway above has been exhausted. After this season the supply of this Colliery will be small.

No. 6 Colliery has worked satisfactorily throughout the season. The Red Ash Vein, from which we have been getting a fair supply during the past season, has ended in fault, and cannot be relied on to produce coal for more than three or four months longer. The east outcrop workings are also nearly exhausted, and to keep up the supply it is proposed to sink a slope on the Mammoth Vein, near Shield's Tunnel. We can sink at this point, in five months, a slope which will develop a body of coal that should enable us to keep up the supply to its present average for three or four years. The west outcrop slope continues in good coal, and should make a satisfactory production throughout the year. The breaker is so old and so badly decayed that it is doubtful if we shall be able to make it last more than another season, after which we may find it advisable to prepare the coal from this mine at No. 5 Breaker.

No. 8 Colliery.—The underground workings are in good condition, and should keep the breaker well supplied for the next three years. The coal here comes from drawing back the lower gangways, and from the workings above the water-level in which a great amount of coal was left when they were previously worked.

The water-level gangways are being reopened, with the double advantage of producing a large amount of coal and of making a permanent watercourse to prevent the surface water from finding its way into the deeper part of the mine. During the present year we should begin to open a new level at this colliery, and I have previously recommended in this report that this opening should be made by sinking a shaft. The breaker and the other structures and machinery are in good order.

No. 9 Colliery.—This colliery was producing largely up to the time when operations were interrupted by the fire of last July. There is enough coal developed in the present levels to keep the breaker running for two years. By the end of the year 1884 we should have new openings made here, and I have before stated that the proposed shaft will supply this breaker as well as Breaker No. 8. The structure and machinery about this place are in good order, and we shall be able to produce coal again as soon as the mines can be reopened and repaired.

No. 10 Colliery.—This is the best colliery on the estate. The inside workings are new, and will develop so large an amount of coal that no further sinking should be required for the next six or seven years. The new breaker is the most satisfactory one we have yet built, and whenever we can maintain a sufficient quantity of water to run the jigs, this colliery can be worked very economically. Considerable additions have been made to the pumping machinery with a view to concentrate the water at one point. This will enable us to abandon the separate pumping establishment heretofore maintained at Greenwood Slope No. 2, which will considerably decrease our pumping expenses. This concentration may require heavier hoisting machinery also, and it will no doubt be wise to put this in as soon as the necessary engines can be built.

Considerable additions have been made to the boilers of this colliery during the past year. A new ventilating fan has been erected, and the structures and machinery may now be said to be in first-rate condition.

No. 11 Colliery.—The new opening at Foster's Tunnel has developed a fine body of good coal, and as the track connecting it with No. 11 Breaker is now completed, this Colliery should make a satisfactory production during the coming year, and should require no more than the ordinary repairs to keep it in good order.

Screen Building.—The jigs heretofore in use at this place were run at large cost for repairs and for royalties. As they had become worn out, they were replaced by a sufficient number of the Clark jigs, which, besides being the cheapest, have proved themselves the most efficient we have ever used. The work of replacing these jigs will be steadily continued, and the Screen Building will be able to prepare more largely and cheaply than ever before.

A new Colliery has been commenced on the Red Ash Vein, overlying the Mammoth, by sinking a slope about a mile east of No. 10 Tunnel. This slope, which will be sunk as rapidly as possible, will develop a large amount of coal, the vein being 11 feet thick, of fine quality, and having about two miles of run. A new breaker must be built, which with the other improvements necessary, cannot be finished before the close of the year.

From the past history of the workings on this vein, it is anticipated that this coal can be cheaply worked, and will be of very satisfactory quality.

The coal mined under lease, on the Company's estate, has been mostly taken from the workings near Tamaqua, the production of which will probably be about the same as during the past year.

Respectfully submitted,
W. D. Zehner,
Sup't.

REPORT OF SUPERVISOR OF CANALS.

Office of the Lehigh Coal and Navigation Company,
Mauch Chunk, Pa., January 1st, 1882.

Mr. E. W. Clark,
President.

Dear Sir: The following report of the Canal Department for the year 1881 is respectfully submitted.

The repairs recommended by Mr. Stockett, the former Superintendent, were completed, and the water was let into the Delaware Division Canal, April 1st, 1881, ready to pass boats, but, owing to the ice freshet in the Lehigh River, February 12th, 1881, which filled up the channel in Packer's Dam with coal dirt, and injuring all the dams, carrying away about 125 feet of Dam No. 4, and filling Pool No. 5 with sand and debris from the same; notwithstanding the unusual continued high water, the inclemency of the weather, and the large amount of dredging to be done, shipments of coal commenced at East Mauch Chunk April 21st, 1881, and at Coal Port on the 29th, after which there was no further interruption until close of navigation, December 15th, 1881.

The extraordinary expense for repairs to the various dams, caused by the heavy ice, February 12th, amounts to $22,640.17, distributed as follows:

Packer's Dam,	at Mauch Chunk,	$400 00
Dam No. 2,	" Parryville,	200 00
" 3, and Feeder,	" Lehigh Gap,	500 00
" 4,	" Kuntz Ford,	18,440 17
" 5,	" Laury's,	300 00
" 6,	" Hokendauqua,	400 00
" 7, and Feeder,	" Allentown,	2,400 00

And for dredging from the same cause amounts to $6,250.40, distributed about equally between Packer's, Mauch Chunk, and Pool No. 5, making the total extraordinary expenses $28,890.57.

The following ordinary repairs and renewals on the Lehigh Canal were made during the past year, viz.: Bridges Nos. 1 and 2, at Coal Port, crossing the L. V. R. R., have been rebuilt; the shipping pockets at Coal Port and East Mauch Chunk were repaired, a new towing-path bridge, at the lower end of pool at East Mauch Chunk, also a new iron road-bridge, crossing the canal at Bethlehem have been built; and three sets of lower gates for Guard Lock No. 3, and Locks Nos. 33 and 36, were built and placed in said locks; and on Delaware Division Canal the wing wall of Ground Hog Lock has been rebuilt; a new stone waste weir, at Rocky Falls, and three stone abutments for road bridges were built; the masonry and wooden trunk for carrying water from the wheels to the canal has been renewed, and two sets of gates for locks at Smithtown and Easton were built, and placed in said locks.

The necessary repairs for the coming year will be as follows, viz.: A new trestle for shipping pockets at East Mauch Chunk; rebuilding the wood-work of the two dredge-boats used on the Lehigh Canal; top planking of the old portion of Dam No. 4; also 150 feet of Dam No. 7, at Allentown will need raising and new planking, and renewal of top of Dam No. 8, or a new dam built below the old one. On the Delaware Division, we must build three stone waste weirs, one in the five-mile level, one at Smithtown, and the other at Neeley's Creek; the wooden arches of aqueducts crossing Tinicum and Tohikon Creeks must be renewed; the stone culvert at Lumberton needs repairing; putting in a new boiler, and renewing the wood-work of the dredge-boat used on the Delaware Division Canal, and cleaning out the bottom of the two-mile level near Bristol. The material for the above repairs and renewals has been purchased and placed on the ground, and the work is progressing, with the exception of the material for dams on the Lehigh, which is partly contracted for.

The total tonnage for the year was $627,422\frac{18}{20}$ tons, against $642,266\frac{4}{20}$ tons in 1880. We had an increase of tonnage in miscellaneous freight of $18{,}907\frac{16}{20}$ tons, and a decrease in tonnage of coal of $33{,}750\frac{16}{20}$ tons, leaving a total decrease of tonnage of 14,843 tons.

During the year 41 new boats have been built or purchased, and 10 run clear; 1 lost in the ice freshet, and 2 torn up (total, 13); this makes the number of Company's boats 337, including 9 large and 15 small boats used in harbor service, leaving the balance, 313 boats, for canal service, against 309 at the same time last year. All these, except 3, are in good condition, and ready for service. During the year, 141 free boats were engaged in transporting coal, against 158 in 1880, a decrease of 17 boats. The boatmen being too poor to replace the same, I would recommend the adoption of our former system of advancing money to boat-builders for boats, which would give them an interest in said boats; and they would get a better class of men to run them, and we could keep up our supply with less capital invested in boats. Three hundred and fifty-eight boats were engaged on the lower part of the canals in miscellaneous traffic; of these, 300 came from the Morris Canal with ore for Glendon and Durham furnaces. If the elements do not interfere, the canals will be ready and in good condition for an early opening of navigation.

Yours respectfully,

JOSEPH WEYHENMEYER,
Gen'l Supervisor

STATEMENT A.

BALANCE SHEET OF THE LEHIGH COAL AND NAVIGATION COMPANY, JANUARY 1, 1882.

DR.		
Lehigh and Susquehanna Railroad, Construction and Branches		$14,002,005 11
Lehigh Navigation and Shipping Improvements		3,000,000 00
Coal Lands and Improvements		7,509,353 28
Opened Work and Cut Coal, in Mines		405,488 01
Mining Equipment		341,156 83
Landed Property and Improvements		726,060 73
Canal Equipment		273,398 13
Supplies on hand at Mines		158,690 56
Coal on hand		69,329 94
18,901 Shares Lehigh Coal and Navigation Co. Stock owned by Company	$945,050 00	
Delaware Division Canal Co. Bonds	306,000 00	
Other Securities owned by Company	459,825 83	
		1,710,875 83
Bills Receivable	$3,144 07	
Bonds and Mortgages	18,494 10	
Principal of Ground and Water Rents	170,011 86	
		191,650 03
Cash on hand		155,526 09
Gold Loan, 1897, assumed by Central R. R. Co. of N. J.	$2,310,000 00	
Gold Loan, 1897, assumed by L. & W. B. Coal Co.	500,000 00	
Gold Loan, 1894, assumed by L. & W. B. C. Co.	771,000 00	
		3,581,000 00
Balance of Individual Ledger		145,755 08
		$32,270,289 62

CR.		
Capital Stock, 206,567 Shares issued	$10,328,350 00	
" 18,901 Shares owned by Company	945,050 00	
		$11,273,400 00
Mortgage Loan, due 1882 (Extended Debentures)	106,190 76	
Loan, due 1882 (Convertible Debentures)	41,550 00	
Loan, due 1884	5,381,840 84	
Loan, due 1894 (Gold)	771,000 00	
Loan, due 1897 (Gold)	4,653,000 00	
Loan, due 1897 (Railroad)	2,000,000 00	
Loan, due 1911 (Consolidated Mortgage)	2,464,000 00	
Seven per cent. Scrip (redeemable in Bonds, due 1911),	6,750 00	
Six per cent. Scrip (Del. Div., due 1883)	129,812 00	
Six per cent. Scrip (Del. Div., due 1884)	113,639 00	
Greenwood, 1st Mortgage, due Oct. 1, 1882	140,000 00	
Greenwood, 2d Mortgage, due Feb. 1, 1892	643,000 00	
		16,450,782 60
Bills Payable		725,000 00
Pay Rolls, charg'd to business of '81, payable Jan., '82,		102,403 18
Vouchers, charg'd to business of '81, payable Jan., '82,		73,204 26
Central R. R. Co. of N. J., Construction Loan		581,180 65
Ground Rents, Mortgages, and Dowers		170,921 18
Interest and Dividends due Jan. 1, 1882, and arrears.		133,963 63
Profit and Loss		2,287,988 92
Dividend Fund		471,445 20
		$32,270,289 62

C. F. HOWELL, *Auditor.*

STATEMENT B.

EARNINGS AND EXPENSES OF THE LEHIGH COAL AND NAVIGATION COMPANY FOR THE YEAR 1881.

LEHIGH AND SUSQUEHANNA RAILROAD.					
Received from Lessees for Rent,		$1,407,505 77			
Received from Tolls on Coal and Freight through Nesquehoning Tunnel,		21,962 56	$1,429,468 33		
CANALS.					
Lehigh Canal Tolls,		$169,772 21			
Less Maintenance of Canal,	$74,952 93				
Less Operation of Canal,	37,510 45				
Less Depreciation in Equipment Account,	1,478 69	113,942 07	55,830 14		
Water-power Rents,			18,947 40		
Delaware Division Canal Tolls,		$116,043 86			
Less Maintenance of Canal,	$30,202 59				
Less Operation of Canal,	10,317 76				
Less Depreciation in Equipment Account,	1,478 70	41,999 05	74,044 81		
COAL.					
Coal Sales,		$1,629,733 86			
Mining Expenses,	$906,085 64				
Preparing Expenses,	362,385 86				
Depreciation in Equipment Account,	19,100 52				
Transportation from Mines to Mauch Chunk,	80,541 28				
	$1,368 113 30				
Coal Sales Expenses,	20,877 80	1,388,991 10	240,742 76		

COAL RENTS.					
Received from Lessees for Royalty, ...			$7,573 64		
Rents, ...		$42,550 95			
Less Maintenance of Land Improvements, ...		6,882 27	35,668 68		
Other Receipts, ...			13,316 32		
Total, ...				$1,875,592 08	
Rent and Taxes, Nesquehoning Valley Railroad, ...			$97,050 00		
Rent and Taxes, Delaware Division Canal, ...			120,330 04		
INTEREST.					
Balance of Interest Account, December 31, 1881, including amount due January 1, 1882, ...			915,039 51		
General Expenses, ...			59,101 24		
Taxes, ...			70,147 82	1,261,668 61	
Earnings, ...				$613,923 47	
Less Sinking Fund of 10 cts. per ton on 648,148 tons of Coal, .			$64,814 80		
Less Depreciation on Coal Improvements, ...			65,332 85	130,147 65	
Surplus for year, ...				$483,775 82	
Balance to Credit of Dividend Fund, December 31, 1880, . . .				194,236 38	
				$678,012 20	
Dividend of One Dollar per share on 206,567 shares of stock paid December 3, 1881, ...				206,567 00	
Balance to Credit of Dividend Fund, December 31, 1881, . . .					$471,445 20

STATEMENT C.

EARNINGS OF LEHIGH AND SUSQUEHANNA RAILROAD FOR YEARS 1880 AND 1881.

MONTHS.	PASSENGERS AND MAILS.		FREIGHT AND EXPRESS.		COAL.		TOTALS.		L. C. & N. CO.'S PROPORTION.	
	1880.	*1881.*	*1880.*	*1881.*	*1880.*	*1881.*	*1880.*	*1881.*	*1880.*	*1881.*
January	$8,962 14	$9,475 51	$35,967 52	$30,014 06	$189,850 02	$217,672 94	$234,779 68	$257,162 51	$78,259 90	$85,720 83
February	9,106 11	8,708 42	36,676 95	31,998 28	106,182 30	299,017 58	151,965 36	339,724 28	50,655 12	113,241 43
March	11,321 29	11,872 01	42,134 95	40,919 06	216,376 80	302,273 70	269,833 04	355,064 77	89,944 35	118,354 92
April	11,851 73	11,563 09	39,192 39	44,552 48	252,964 54	240,026 66	304,008 66	296,142 23	101,336 22	98,714 07
May	11,044 71	13,075 93	35,733 50	46,266 06	186,237 22	246,447 36	233,015 43	305,789 35	77,671 81	101,929 78
June	10,803 05	11,932 35	36,304 22	45,575 01	210,582 41	286,330 05	257,689 68	343,837 41	85,896 56	114,612 47
July	14,671 34	15,811 76	37,384 12	44,762 72	178,270 33	303,556 18	230,325 79	364,130 66	76,775 26	121,376 89
August	15,354 01	17,955 36	40,726 59	45,760 95	230,663 32	327,093 97	286,743 92	390,810 28	95,581 30	130,270 09
September	13,641 07	18,445 00	41,096 37	53,521 50	388,064 45	305,856 77	442,801 89	377,823 27	147,600 63	125,941 09
October	13,077 55	16,892 99	47,191 67	58,350 99	300,990 58	328,128 46	361,259 80	403,372 44	120,419 93	134,457 48
November	12,033 60	13,312 58	40,167 38	53,123 58	306,974 02	314,542 84	359,175 00	380,979 00	119,725 00	126,993 00
December	12,509 05	15,241 87	32,822 10	45,931 89	237,116 01	346,507 36	282,447 16	407,681 12	94,149 05	135,893 72
Totals	$144,375 65	$164,286 87	$465,397 76	$540,776 58	$2,804,272 00	$3,517,453 87	$3,414,045 41	$4,222,517 32	$1,138,015 13	$1,407,505 77

STATEMENT D.

COMPARATIVE STATEMENT OF COAL TONNAGE

ON LEHIGH AND SUSQUEHANNA RAILROAD.

	1880—Tons.	1881—Tons.
From Wyoming region,	1,841,164	2,427,728
From Upper Lehigh region—Nescopec Branch,	448,322	531,742
From Hazleton region,	6,560	9,253
From Black Creek region—Drifton Branch,	401,943	365,188
From Beaver Meadow region,	501,076	556,082
From Mahanoy region,	1,226	2,577
From Mauch Chunk region,	642,918	734,244
From Schuylkill region,		472
	3,843,209	4,627,286
Showing increase compared with 1880,		784,077

DISTRIBUTED AS FOLLOWS:

	1880—Tons.	1881—Tons.
Delivered to connecting Railroads east of Mauch Chunk,	2,865,622	3,536,727
Delivered along the line below Mauch Chunk,	237,133	246,822
Delivered to Lehigh Canal at Coalport,	369,729	318,704
Delivered along the line above Mauch Chunk,	12,893	15,832
Delivered to connecting Railroads above Mauch Chunk,	119,537	225,802
Delivered to Lehigh Valley R. R. at Packerton,	95	227
Coal for Company's use,	238,200	283,172
	3,843,209	4,627,286
Of the above tonnage there was delivered by rail below Mauch Chunk,	3,102,850	3,783,776

STATEMENT E.

COMPARATIVE STATEMENT OF COAL TONNAGE

ON LEHIGH COAL AND NAVIGATION CO.'S CANALS.

	1880—Tons.	1881—Tons.
From Wyoming region, ...	46,638	35,952
From Upper Lehigh region, ...	28,984	33,083
From Hazleton and Black Creek regions, ...	69,209	66,929
From Beaver Meadow region, ...	50,456	57,134
From Mahanoy region, ...	7,104	12,812
From Mauch Chunk region, ...	229,522	190,199
	431,913	396,109
Showing a decrease of		35,804

DISTRIBUTED AS FOLLOWS:

	1880—Tons.	1881—Tons.
Consumed on line of Lehigh Canal, ...	72,885	73,740
Consumed on line of Delaware Division Canal, . . .	41,467	49,455
Passed to Morris Canal, ...	1,729	1,243
Passed to Delaware and Raritan Canal, ...	90,810	96,438
Passed through to Bristol, ...	225,022	175,233
	431,913	396,109

STATEMENT F.

COMPARATIVE RECEIPTS AND SHIPMENTS OF COAL OVER THE LEHIGH AND SUSQUEHANNA R. R. AND LEHIGH CANALS FOR YEARS 1876, 1877, 1878, 1879, 1880, 1881.

Received from	*1876.*	*1877.*	*1878.*	*1879.*	*1880.*	*1881.*
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Wyoming Region,	1,422,436	1,393,444	1,048,098	2,002,907	1,841,164	2,427,728
Upper Lehigh Region—Nescopec Branch,	250,577	299,053	280,606	420,108	448,323	531,742
Hazleton Region, *via* L. V. R. R.,	137,149	122,308	92,976	58,496	55,350	60,670
Black Creek Region, *via* Drifton Branch,	74,632	295,404	315,286	389,473	401,943	365,188
Beaver Meadow Region, *via* N. V. R. R.,	478,281	407,639	284,966	495,500	501,076	556,082
Beaver Meadow Region, *via* L. V. R. R.,	19,420	22,914	10,123	6,794	1,894	4,778
Mahanoy Region,	17,234	6,529	4,175	7,176	8,330	15,389
Mauch Chunk Region,	605,660	556,599	462,206	777,580	647,313	742,642
Hazardville,	29,838	12,279	5,295			
Schuylkill Region,						473
TOTALS,	3,035,227	3,116,169	2,503,731	4,158,034	3,905,393	4,704,692
Delivered to						
Connecting roads east of Mauch Chunk,	1,878,339	2,339,928	1,757,562	3,169,882	2,865,622	3,536,725
By canal east of Mauch Chunk,	685,195	346,671	414,208	456,031	431,913	396,109
Consumed on line of Railroad below Mauch Chunk,	120,672	105,722	117,184	195,675	237,133	246,823
Consumed on line of Railroad above Mauch Chunk,	11,307	16,962	8,357	13,877	12,893	15,833
To connecting roads above Mauch Chunk,	119,852	124,490	49,016	90,870	119,537	225,803
To Lehigh Valley Railroad at Packerton,	32,457	10,157	4,300	1,902	95	227
Coal for Company's use,	153,176	165,551	153,004	229,797	238,200	283,172
Hazardville,	34,229	6,688	100			
TOTALS,	3,035,227	3,116,169	2,503,731	4,158,034	3,905,393	4,704,692

STATEMENT G.

PRODUCTION OF THE LEHIGH COAL AND NAVIGATION COMPANY'S LEHIGH COLLIERIES, YEAR 1881.

MONTHS.	COLLIERY No. 3.	COLLIERY No. 4.	COLLIERY No. 5.	COLLIERY No. 6.	COLLIERY No. 8.	COLLIERY No. 9.	COLLIERY No. 10.	COLLIERY No. 11.	TOTAL.
	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.
January, ...	5,118 03		4,288 06	3,291 12	3,987 17	3,983 04	3,937 12	211 05	24,817 19
February, ...	7,972 13		4,754 07	6,019 03	8,040 09	7,728 05	2,962 05	228 12	37,705 14
March, ...	7,990 17		5,545 12	6,885 14	8,637 06	8,861 16	2,361 11	4,634 16	44,917 12
April, ...	7,304 18		5,347 17	6,391 14	7,657 07	6,835 04	4,076 15	4,589 09	42,203 04
May, ...	8,075 01		6,048 01	8,047 15	8,138 01	9,501 05	6,695 06	5,337 11	51,843 00
June, ...	9,855 17		6,844 17	8,205 09	10,008 00	9,532 04	9,351 03	8,244 01	62,041 11
July, . . .	10,140 02	2,361 02	7,879 14	8,731 18	13,250 03	10,123 19	9,956 01	9,558 07	72,001 06
August, ...	12,206 12	7,032 19	8,185 14	8,474 06	13,507 10	127 16	9,238 05	9,118 07	67,891 09
September, ...	10,660 19	7,917 15	3,526 16	7,225 08	13,643 18		5,572 07	7,833 04	56,380 07
October, ...	10,401 09	11,705 09	5,057 00	8,889 17	14,326 18		5,585 06	7,041 12	63,007 11
November, ...	10,352 08	10,544 15	7,324 09	9,026 19	12,529 02		5,083 10	5,600 18	60,462 01
December, ...	10,404 07	11,222 03	6,533 09	8,489 14	10,946 10		10,890 03	6,389 15	64,876 01
	110,483 06	50,784 03	71,336 02	89,679 09	124,673 01	56,693 13	75,710 04	68,787 17	648,147 15

STATEMENT H.

PRODUCTION IN SIZES OF THE LEHIGH COAL AND NAVIGATION COMPANY'S LEHIGH COLLIERIES IN 1881.

MONTHS.	LUMP.	STEAMBOAT.	BROKEN.	EGG.	STOVE.	CHESTNUT.	CHESTNUT No. 2.	TOTAL.
	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.
January, ...	3,868 12	273 12	4,710 02	3,728 01	3,923 02	4,817 11	3,496 19	24,817 19
February, ...	6,112 17	293 06	7,249 08	5,748 03	5,989 00	6,742 19	5,570 01	37,705 14
March, ...	6,654 11	405 10	8,450 00	7,116 06	6,666 01	8,586 16	7,038 08	44,917 12
April, ...	6,489 13	426 09	7,557 00	7,077 02	5,539 00	8,175 12	6,938 08	42,203 04
May, ...	8,266 14	450 12	9,578 06	8,408 17	6,452 17	10,209 04	8,476 10	51,843 00
June, ...	9,938 16	491 02	11,329 16	10,023 02	7,712 13	12,546 14	9,999 08	62,041 11
July, ...	12,213 10	417 09	13,802 16	10,961 13	8,650 08	14,199 08	11,756 02	72,001 06
August, ...	10,173 04	277 10	13,387 03	9,461 03	9,165 06	13,505 06	11,921 17	67,891 09
September, ...	7,753 01	213 16	10,822 17	8,125 08	7,967 00	11,867 17	9,630 08	56,380 07
October, . . .	7,681 11	455 12	12,137 11	8,483 05	9,190 18	14,333 11	10,725 03	63,007 11
November, . .	8,536 19	448 08	11,914 14	8,022 07	8,532 08	14,279 08	8,727 17	60,462 01
December, ...	9,343 16	442 13	12,710 07	8,421 18	10,258 10	15,809 01	7,889 16	64,876 01
	97,033 04	4,595 19	123,650 00	95,577 05	90,047 03	135,073 07	102,170 17	648,147 15

STATEMENT I.

LEHIGH CANAL TOLLS FOR THE YEAR 1881.

Month.	Company's Coal.	Other Coal.	Miscellaneous Freight.	Total.
March,			101.70	101.70
April,	1,541.38	2,317.35	520.26	4,378.99
May,	8,182.87	10,354.38	1,236.78	19,774.03
June,	8,169.46	12,069.08	1,438.85	21,677.39
July,	9,635.12	13,022.47	1,124.99	23,782.58
August,	8,713.02	16,716.79	1,738.53	27,168.34
September,	7,902.80	14,219.35	1,161.55	23,283.70
October,	8,975.15	13,967.06	1,193.20	24,135.41
November,	9,198.22	13,777.39	1,114.32	24,089.93
December,	57.63	512.02	810.49	1,380.14
	62,375.65	96,955.89	10,440.67	169,772.21

STATEMENT K.

DELAWARE DIVISION CANAL TOLLS FOR THE YEAR 1881.

Month.	Company's Coal.	Other Coal.	Miscellaneous Freight.	Total.
March.		24.19	344.43	368.62
April,	1,224.31	925.74	2,691.75	4,841.80
May,	5,892.42	4,516.79	2,871.06	13,280.27
June,	6,158.45	5,797.69	2,734.10	14,690.24
July,	7,778.81	5,950.33	2,280.89	16,010.03
August,	7,034.99	7,225.36	3,283.68	17,544.03
September,	6,284.25	6,370.83	3,144.89	15,799.97
October,	7,251.47	5,773.53	3,258.86	16,283.86
November,	5,264.03	7,111.97	3,290.35	15,666.35
December,	63.08	131.03	1,364.58	1,558.69
	46,951.81	43,827.46	25,264.59	116,043.86

STATEMENT L.

SUMMARY OF FREIGHT TRANSPORTED OVER THE LEHIGH AND DEL. DIV. CANALS DURING THE YEAR 1881.

ARTICLES.	ASCENDING.		DESCENDING.		TOTAL.	
	Tons of 2240 lbs.	Cwt.	Tons of 2240 lbs.	Cwt.	Tons of 2240 lbs.	Cwt.
Coal,	4,079	13	396,855	03	400,934	16
Iron ore,	19,425	11	14,340	01	33,765	12
Limestone, paving, and building stone,	5,130	12	35,480	14	40,611	06
Slate, earth, and sand,	23,500	09	13,922	03	37,422	12
Plaster,	1,278	14	8	01	1,286	15
Manure and guano,	10,050	19	205	08	10,256	07
Hay and straw,	108	06	230	19	339	05
Fish, meat, and other provisions,	30	17			30	17
Lumber, logs, lath, and shingles,	4,104	19	23,020	04	27,125	03
Hoop-poles, staves, and cordwood,	5,288	06	3,086	12	8,374	18
Vegetables and fruit,	296	12	4	07	300	19
Grain, seed, flour, and feed,	851	16	163	03	1,014	19
Beer, porter, and cider,	112	19	7	02	120	01
Groceries, oils, and liquors,	408	17	14	01	422	18
Furniture and household goods,	13	18	96	01	109	19
Brick,	2,793	01	421	01	3,214	02
Lime and cement,	589	01	11,807	15	12,396	16
Machinery,	16	10	33	04	49	14
Bar and rolled iron, pig iron,	453	03	45,957	01	46,410	04
Hardware, dry goods, and drugs,	727	03			727	03
Salt,	2,074	06	2	04	2,076	10
Merchandise,	253	14	178	14	432	08
	81,589	06	545,833	18	627,423	04